

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

1. (Currently Amended) A tubular reaction vessel comprising a longitudinally-extending wall with a space thereinside and heating means which heats the surface of the wall at a silicon deposition feasible temperature, wherein a silicon deposition feedstock gas inflow opening and a deposited silicon discharge opening are provided at an upper portion and a lower end portion respectively, and a plurality of flow resistance-increasing regions are provided on a wall surface of the tubular reaction vessel that is contacted with a feedstock gas, wherein the plurality of flow resistance-increasing regions are at least one of protrudent and concave regions.

2. (Cancelled)

3. (Previously Presented) The tubular reaction vessel according to claim 1, wherein each flow resistance-increasing region is a protrusion provided in the tubular reaction vessel, and an external wall of the reaction vessel is reduced in thickness in the protrusion-provided area.

4. (Previously Presented) The tubular reaction vessel according to claim 1, wherein each flow resistance-increasing region is a protrusion provided in the tubular reaction vessel, and the tubular reaction vessel is arranged to be heated by a high frequency heating coil and includes means for reducing high frequency energy from the high frequency heating coil in the protrusion-provided area relative to a non-protrusion-provided area.

5. (Currently Amended) A process for producing silicon, comprising:

providing a tubular reaction vessel that comprises a longitudinally-extending wall with a space thereinside and heating means which heats the surface of the wall at a silicon deposition feasible temperature, wherein a silicon deposition feedstock gas inflow opening and a deposited silicon discharge opening are provided at an upper portion and a lower end portion respectively and a flow resistance-increasing region is created on a wall surface of the tubular reaction vessel that is contacted with a feedstock gas, wherein the plurality of flow resistance-increasing regions are at least one of protrudent and concave regions;

introducing a silicon deposition feedstock gas containing a chlorosilane through the silicon deposition feedstock gas inflow opening; and

producing polycrystalline silicon from the chlorosilane-containing silicon deposition feedstock gas in the heated reaction vessel.

6. (Cancelled)